(FILE 'HOME' ENTERED AT 10:02:24 ON 16 MAY 2000)

FILE 'MEDLINE' ENTERED AT 10:02:29 ON 16 MAY 2000

L1 0 S AEROSOL AND (AERODYNAMIC DIAMETER) AND TARGET AND (ALVEOLI OR

L2 2 S AEROSOL AND (AERODYNAMIC DIAMETER) AND TARGET AND (ALVEOLI OR

FILE 'BIOSIS, EMBASE, CAPLUS, BIOTECHDS' ENTERED AT 10:05:29 ON 16 MAY 2000

L3 0 S L1

L4 4 S L2

L5 2 DUP REM L4 (2 DUPLICATES REMOVED)

L12 ANSWER 23 OF 41 CAPLUS COPYRIGHT 2001 ACS
AN 1987:583399 CAPLUS
DN 107:183399
TI Activity of synthetic polynucleotides coated with **poly-L-lysine**
AU Ershov, F. I.; Kadyrova, A. A.
CS Inst. Virusol. im. Ivanovskogo, Moscow, USSR
SO Vopr. Virusol. (1987), 32(3), 366-9
CODEN: VVIRAT; ISSN: 0507-4088
DT Journal
LA Russian
AB **Poly-L-lysine**-encapsulated poly(I).cntdot.poly(C) and poly(G).cntdot.poly(C) were less toxic to mice when administered i.v. or i.p. than noncoated polynucleotides. The antiviral activities of the 2 polynucleotides were enhanced by coating, esp. of poly(I).cntdot.poly(C). In african green monkeys 3 mg/kg of coated polynucleotides, esp. poly(I).cntdot.poly(C), applied intracardially or as **aerosol** had a high interferon-inducing activity. Thus, low toxicity and high interferon-inducing and antiviral activity of coated poly(I).cntdot.poly(C) and poly(G).cntdot.poly(C) suggest their use in clin. interferon induction.

L9 ANSWER 11 OF 11 CAPLUS COPYRIGHT 2001 ACS
AN 1995:843504 CAPLUS
DN 123:305858
TI Simulated **aerosol** lung **transfection** with cationic liposome/plasmids on a cascade impactor seeded with 2-CFSMEo cells.
AU Schreier, H.; Conary, J. T.; Christman, B. W.; Gagne, L.
CS School Medicine, Vanderbilt University, Nashville, TN, 37232, USA
SO Proc. Int. Symp. Controlled Release Bioact. Mater. (1995), 22nd, 434-5
CODEN: PCRMEY; ISSN: 1022-0178
DT Journal
LA English
AB The aim of this project was to devise an in **vitro** system for the controlled and reproducible simulation of pulmonary gene **transfection** via **aerosol**. This should help in acquiring an understanding of the processes governing the cellular fate (kinetics, metab., expression efficacy) of gene products.

09/232,c

L1 ANSWER 17 OF 22 MEDLINE
AN 97077028 MEDLINE
DN 97077028 PubMed ID: 8919595
TI Delivery of DNA-cationic liposome complexes by small-particle **aerosol**.
AU Schwarz L A; Johnson J L; Black M; Cheng S H; Hogan M E; Waldrep J C
CS Department of Molecular Physiology and Biophysics, Baylor College of Medicine, Houston, TX 77204, USA.
SO HUMAN GENE THERAPY, (1996 Apr 10) 7 (6) 731-41.
Journal code: A12; 9008950. ISSN: 1043-0342.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199703
ED Entered STN: 19970321
Last Updated on STN: 19970321
Entered Medline: 19970311
AB **Aerosol** delivery of gene therapy for treatment of lung diseases allows topical treatment of the airways with DNA concentrations not obtainable by systemic administration. We have investigated delivery of cationic liposomes complexed to plasmid DNA in a small particle **aerosol**. Plasmid cDNA-DMRIE/DOPE complexes were nebulized using either an Aerotech II or Puritan-Bennett 1600 (PB1600) nebulizer. Reservoir sampling showed that DNA-DMRIE/DOPE complexes were damaged to a significant degree during nebulization, such that activity of **transfected** gene was diminished. Of the nebulizers analyzed, DNA-DMRIE/DOPE complexes were more stable in the PB1600. The loss of effective **transfection** by DNA-DMRIE/DOPE, as detected by decreased reporter gene activity in A549 lung cells, was consistent with denaturation of the DMRIE/DOPE. In contrast, nebulized DNA-DOSPA/DOPE complexes retained complete ability to **transfect**. Adjustments to flow rate and reservoir volume of the PB1600 allowed a longer period of delivery of active DNA-DMRIE/DOPE particles. DNA-DMRIE/DOPE was radiolabeled with Technetium-99m (99mTc), nebulized, and the output captured in either an Andersen Sampler (AS) (Andersen, 1958) cascade impactor particle size analyzer or an all glass impinger. cDNA-cationic lipid complexes were detected in size ranges of 0.4-10 microns, with most particles found between 1-2 microns. **Aerosol** output was consistent from 0 to 5 min. These results show the feasibility of **aerosol** delivery of DNA-cationic lipids for the purposes of gene therapy to the lung.

L1 ANSWER 15 OF 22 MEDLINE
AN 97200263 MEDLINE
DN 97200263 PubMed ID: 9048198
TI Optimization of formulations and conditions for the **aerosol** delivery of functional cationic lipid:DNA complexes.
AU Eastman S J; Tousignant J D; Lukason M J; Murray H; Siegel C S; Constantino P; Harris D J; Cheng S H; Scheule R K
CS Genzyme Corporation, Framingham, MA 0701-9322, USA.
SO HUMAN GENE THERAPY, (1997 Feb 10) 8 (3) 313-22.
Journal code: A12; 9008950. ISSN: 1043-0342.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199708
ED Entered STN: 19970902
Last Updated on STN: 19970902
Entered Medline: 19970821
AB We have examined several variables inherent in aerosolizing cationic lipid:DNA complexes using a jet nebulizer and thereby have optimized the delivery of functional complexes. Maximal **aerosol** transfer efficiency of cationic lipid:pDNA complexes was quantitated and shown to require the presence of at least 25 mM NaCL as an excipient. This is possibly related to effects on the measured zeta potentials of the complex, which indicate that the complexes are more highly charged in solutions of physiological ionic strength than in solutions of low ionic strength. Inclusion of saline also resulted in retention of the starting lipid to plasmid DNA (pDNA) ratio following nebulization. These data were used to design in vitro aerosolization experiments with tissue culture cells that resulted in the identification of a cationic lipid:pDNA ratio of 0.75:1 (mol:mol) as being optimal for aerosolization. This formulation largely protected pDNA from shear degradation during nebulization and produced a respirable **aerosol** droplet size (1-3 microns). It was tested further in a mouse model and shown to result in the dose-dependent **transfection** of mouse lungs, generating the equivalent of several picograms of reporter gene activity per mouse lung. The results of these experiments have provided a set of optimal conditions for nebulizing cationic lipid:pDNA complexes that can be used as a starting point for the
further evaluation of **aerosol** delivery of these nonviral gene delivery vectors in vivo.

L1 ANSWER 11 OF 22 MEDLINE
AN 1998117445 MEDLINE
DN 98117445 PubMed ID: 9458241
TI Aerosolization of cationic lipid:pDNA complexes--in vitro optimization of nebulizer parameters for human clinical studies.
AU Eastman S J; Tousignant J D; Lukason M J; Chu Q; Cheng S H; Scheule R K
CS Genzyme Corporation, Framingham, MA 01701-9322, USA.
SO HUMAN GENE THERAPY, (1998 Jan 1) 9 (1) 43-52.
Journal code: A12; 9008950. ISSN: 1043-0342.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199803
ED Entered STN: 19980312
Last Updated on STN: 19980312
Entered Medline: 19980305
AB Previously, we have described the optimization of the **aerosol** delivery of a nonviral gene therapy vector to the lungs of rodents (Eastman et al., 1997b). Although aerosolizing cationic lipid:pDNA complexes into a whole-body exposure chamber resulted in high levels of reporter gene expression in the lungs of BALB/c mice, the conditions employed were not optimal for the delivery of lipid:pDNA complexes to the lungs of human patients. That is, the consumption rate of the material in the nebulizer, and thus the delivery time, were very slow and the **aerosol** was delivered in a continuous flow. Here we describe in vitro experiments used to develop a cationic lipid:pDNA **aerosol** with characteristics more suitable for delivery to the lungs of humans, as a necessary prerequisite for conducting a clinical study with human cystic fibrosis patients. Using cascade impactors and all-glass impingers, we have screened several commercially available nebulizers for their ability to deliver intact, respirable, active lipid:pDNA complexes in the shortest time possible, and have identified the Pari LC Jet Plus nebulizer as the optimal nebulizer that meets these criteria. Using this nebulizer in an intermittent mode to mimic breath actuation, consumption rates of approximately 0.6 ml/min of the cationic lipid:pDNA complexes (6 mM cationic lipid:8 mM pDNA) were obtained. The plasmid DNA remained intact and the complexes were shown to maintain activity throughout the nebulization run. Based on measurements of the nebulized dose and the mass median aerodynamic diameter, we calculate a delivered dose of approximately 22 micromol (7.2 mg) of pDNA for each 8 ml of cationic lipid:pDNA complex aerosolized to the lungs of a human patient. This dose should be sufficient to test the clinical efficacy of cationic lipid-mediated gene delivery for the treatment of cystic fibrosis.

Condensed ribozyme

L5 ANSWER 14 OF 27 MEDLINE
AN 97123500 MEDLINE
DN 97123500 PubMed ID: 8968747
TI Delivery of a hammerhead **ribozyme** specifically down-regulates the production of fibrillin-1 by cultured dermal fibroblasts.
AU Kilpatrick M W; Phylactou L A; Godfrey M; Wu C H; Wu G Y; Tsipouras P
CS Department of Pediatrics, University of Connecticut Health Center, Farmington 06030, USA.
NC DK92182 (NIDDK)
HL48126 (NHLBI)
SO HUMAN MOLECULAR GENETICS, (1996 Dec) 5 (12) 1939-44.
Journal code: BRC; 9208958. ISSN: 0964-6906.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199703
ED Entered STN: 19970327
Last Updated on STN: 19970327
Entered Medline: 19970314
AB The hammerhead **ribozyme** is a small catalytic RNA molecule. Potential hammerhead **ribozymes** that possess a catalytic domain and flanking sequence complementary to a target mRNA can cleave in trans at a putative cleavage site within the target molecule. We have investigated the potential of hammerhead **ribozymes** to down-regulate the product of the fibrillin-1 gene (FBN1). Fibrillin is a 347 kDa glycoprotein that is a major constituent of the elastin-associated microfibrils. Mutations in the FBN1 gene are responsible for Marfan syndrome (MFS), a common systemic disorder of the connective tissue. Many FBN1 mutations responsible for MFS appear to act in a dominant-negative fashion, raising the possibility that reduction of the amount of product from the mutant FBN1 allele might be a valid therapeutic approach for MFS.

A trans-acting hammerhead **ribozyme** (FBN1-RZ1) targeted to the 5' end of the human FBN1 mRNA has been designed and synthesized, and shown to cleave its target efficiently in vitro. FBN1-RZ1 cleavage is magnesium dependent and efficient at both 37 and 50 degrees C. Delivery of the FBN1-RZ1 **ribozyme** into cultured dermal fibroblasts, by receptor-mediated endocytosis of a **ribozyme**-transferrin-**polylysine** complex, specifically reduces both cellular FBN1 mRNA and the deposition of fibrillin in the extracellular matrix. These results suggest that the use of hammerhead **ribozymes** is a valid approach to the study of fibrillin gene expression and possibly to the development of a therapeutic approach to MFS.

L3 ANSWER 19 OF 35 MEDLINE
AN 97195316 MEDLINE
DN 97195316 PubMed ID: 9042684
TI **Aerosol** therapy in patients with **cystic fibrosis**.
AU Schoni M H; Nikolaizik W H
CS Alpine Children's Hospital, Davos.
SO SCHWEIZERISCHE MEDIZINISCHE WOCHENSCHRIFT. JOURNAL SUISSE DE MEDECINE, (1997 Feb 1) 127 (5) 158-64. Ref: 53
Journal code: UEI; 0404401. ISSN: 0036-7672.
CY Switzerland
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
EM 199703
ED Entered STN: 19970327
Last Updated on STN: 19970327
Entered Medline: 19970320
AB **Aerosol** therapy is one of the mainstays of treatment, together with regular physiotherapy, in patients with **cystic fibrosis**. Inhalation can contribute to hydration of the epithelial lining fluid as well as delivering different drugs directly to the lungs. Topically administered antibiotics can protect the lungs from Pseudomonas infection, recombinant DNase, amiloride and beta-agonists can have a positive effect on the mucociliary clearance, and steroid inhalations can reduce inflammation. Therefore, all these drugs are part of a comprehensive treatment strategy contributing to improvement in lung function and quality of life. **Gene therapy** and pharmacological correction of the chloride channel defect are perspectives for the future. **Aerosol** therapy, however, is somewhat cumbersome and requires strict patient education.

L3 ANSWER 12 OF 35 MEDLINE
AN 1998281072 MEDLINE
DN 98281072 PubMed ID: 9619773
TI **Aerosol** delivery of lipid:DNA complexes to lungs of rhesus monkeys.
AU McDonald R J; Liggitt H D; Roche L; Nguyen H T; Pearlman R; Raabe O G; Bussey L B; Gorman C M
CS University of California, Department of Pediatrics and California Regional Primate Research Center, Davis 95616, USA.
SO PHARMACEUTICAL RESEARCH, (1998 May) 15 (5) 671-9.
Journal code: PHS; 8406521. ISSN: 0724-8741.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199807
ED Entered STN: 19980723
Last Updated on STN: 19980723
Entered Medline: 19980714
AB PURPOSE: The potential use of **aerosol** delivery for non-viral **gene therapy** was tested by nebulization of lipid:DNA complexes to the lungs of rhesus monkeys. METHODS: Four female rhesus monkeys were dosed with lipid:DNA formulations via **aerosol** inhalation, where the DNA coded for the human **Cystic Fibrosis** Transmembrane Conductance Regulator (hCFTR) protein. Delivery of DNA was determined in lung samples by polymerase chain reaction (PCR) by qualitative and quantitative methods. Transgene specific messenger RNA was measured by reverse transcriptase PCR (RT-PCR) and protein expression and localization were evaluated by immunohistochemistry (IHC). RESULTS: Approximately four mg of DNA, complexed with cationic lipid 1.2-dimyristoyl-sn-glycero-3-ethylphosphatidylcholine (EDMPC) and cholesterol were delivered to the lungs of animals by airjet nebulizer. Three days after dosing, tissue samples from the lung were collected and shown to have vector specific DNA, RNA and the presence of CFFR protein. Specifically, the hCFTR protein was distributed widely, although non-uniformly, throughout airway epithelium being located on the apical surface of epithelial cells. Importantly, no adverse clinical effects were observed and the lungs showed no histological abnormalities or signs of acute inflammation. CONCLUSIONS: This study shows that lipid:DNA formulations based on EDMPC and cholesterol can be administered to primates by nebulization resulting in measurable expression of the hCFTR protein. The absence of inflammation is also encouraging and such systems may have utility for delivery of genes to the lungs for the treatment of a variety of pulmonary diseases including **cystic fibrosis**.

WEST

Searches for User *rschnizer* (Count = 112)

Queries 63 through 112.

Next Oldest

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S #	Updt	Database	Query	Time	Comment
S112	U	USPT	5404871.pn. or 5450336.pn. or 5589466.pn. or 5718222.pn. or 5803078.pn. or 5819726.pn. or 5823178.pn. or 5829435.pn. or 5849719.pn. or 5906202.pn.	2000-05-16 10:14:55	
S111	U	USPT	5333106.pn. or 5756353.pn. or 5994314.pn. or 5049389.pn. or 5497763.pn. or 5522385.pn.	2000-05-16 10:09:53	
S110	U	USPT	5522385.pn.	2000-05-16 10:08:36	
S109	U	USPT	5522385.pn. and (polynucleotide or nucleic or dna or gene or genetic)	2000-05-16 08:45:40	
S108	U	USPT	5522385.pn. and powder	2000-05-16 08:40:31	
S107	U	USPT	5522385.pn.	2000-05-16 08:40:23	
S106	U	USPT	5915378.pn. and train$3	2000-05-16 08:03:51	
S105	U	USPT	5915378.pn.	2000-05-16 08:02:24	
S104	U	USPT	5915378.pn. and coach$3	2000-05-16 08:02:09	
S103	U	USPT	5364838.pn. and coach$3	2000-05-16 08:00:18	
S102	U	USPT	5497763.pn. and (lipid or liposome)	2000-05-16 07:35:54	
S101	U	USPT	5497763.pn.	2000-05-16 07:35:31	
S100	U	USPT	(rubsamen.in. or lloyd.in.) and (lipid or liposome) and aerosol	2000-05-16 07:25:49	
S99	U	USPT	5823178.pn. and (lipid or liposome)	2000-05-16 07:22:16	

S98	U	USPT	5819726.pn. and (lipid or liposome)	2000-05-16 07:09:31
S97	U	USPT	5819726.pn.	2000-05-16 07:09:14
S96	U	USPT	(aerosol and ((lipid or liposome)same (extrusion or extrud$2))) and (extrud$2 same (pore or porous))	2000-05-15 14:22:10
S95	U	USPT	aerosol and ((lipid or liposome)same (extrusion or extrud$2))	2000-05-15 14:20:26
S94	U	USPT	aerosol and (lipid same (extrusion or extrud$2))	2000-05-15 14:20:06
S93	U	USPT	5662929.pn. or 5653996.pn.	2000-05-15 14:11:05
S92	U	USPT	5662929.pn. or 55653996.pn.	2000-05-15 14:10:53
S91	U	USPT	5994314.pn.	2000-05-15 13:39:14
S90	U	USPT	5994314.pn. and alveol$2	2000-05-15 13:38:59
S89	U	USPT	5756353.pn. and powder	2000-05-15 13:36:02
S88	U	USPT	5756353.pn.	2000-05-15 13:35:44
S87	U	USPT	5756353.pn. and (lipid or liposome or cation$)	2000-05-15 13:35:34
S86	U	USPT	5906202.pn. and (lipid or liposome or cation$)	2000-05-15 13:08:23
S85	U	USPT	5906202.pn. and alveol$	2000-05-15 13:07:14
S84	U	USPT	5906202.pn.	2000-05-15 13:06:58
S83	U	USPT	5522385.pn.	2000-05-15 12:20:12
S82	U	USPT	aerosol same particle same heat$3 same evaporate	2000-05-15 12:08:41
S81	U	USPT	aerosol same heat$3 same evaporate	2000-05-15 12:08:27
S80	U	USPT	aerosol same particle same heat$3	2000-05-15 12:07:57
S79	U	USPT	aerosol same (heat$3) same adjust same diameter	2000-05-15 12:02:40
S78	U	USPT	aerosol same evaporate same adjust same diameter	2000-05-15 12:00:39
S77	U	USPT	aerosol same evaporate	2000-05-15 11:59:49

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Searches for User *rschnizer* (Count = 112)

Queries 13 through 62.

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S #	Updt	Database	Query	Time	Comment
S62	U	USPT	5756353.pn. and (mmad or(aerodynamic adj diameter))	2000-05-15 07:12:33	
S61	U	USPT	5756353.pn.	2000-05-15 07:12:00	
S60	U	USPT	(aerosol same lipid same dna) and lung	2000-05-15 07:10:23	
S59	U	USPT	aerosol and lipid and dna and lung	2000-05-15 07:09:26	
S58	U	USPT	(4950477.pn. or 5049389.pn. or 5364615.pn. or 6051551.pn.) and (membrane same pore)	2000-05-15 07:07:44	
S57	U	USPT	anderson adj cascade adj impactor	2000-05-15 07:00:04	
S56	U	USPT	(4950477.pn. or 5049389.pn. or 5364615.pn. or 6051551.pn.) and ((central adj airway) or bronch$)	2000-05-15 06:45:17	
S55	U	USPT	(mmad or mmead or (aerodynamic adj diameter)) same ((upper adj respiratory) or oropharyngeal or trachea)	2000-05-15 06:39:17	
S54	U	USPT	(mmad or mmead or (aerodynamic adj diameter)) and ((upper adj respiratory) or oropharyngeal or trachea)	2000-05-15 06:38:54	
S53	U	USPT	mmad or mmead or (aerodynamic adj diameter)	2000-05-15 06:36:54	
S52	U	USPT	4950477.pn. or 5049389.pn. or 5364615.pn. or 6051551.pn.	2000-05-15 06:22:45	
S51	U	USPT	(((aerodynamic adj diameter) and aerosol)and lung) and ((1 or 2 or 3 or 4 or 5) same alveoli)	2000-05-12 15:57:59	
S50	U	USPT	((aerodynamic adj diameter) and aerosol) and lung	2000-05-12 15:56:26	
S49	U	USPT	(aerodynamic adj diameter) and aerosol	2000-05-12	

S76	U	USPT	aerosol same evaporate	2000-05-15 11:59:10
S75	U	USPT	aerosol same (size or diameter) same heat$3 same (alter or adjust)	2000-05-15 10:42:57
S74	U	USPT	aerosol same (size or diameter) same heat$3	2000-05-15 10:41:34
S73	U	USPT	(liposomes same aerosol) and (membrane same pore)and lung	2000-05-15 09:58:11
S72	U	USPT	(liposomes same aerosol) and (membrane same pore)	2000-05-15 09:57:06
S71	U	USPT	(liposomes same aerosol) and ((heat$3 or evaporat$) same volume)	2000-05-15 09:39:59
S70	U	USPT	(liposomes same aerosol) and ((heat$ or evaporat$) same volume)	2000-05-15 09:39:10
S69	U	USPT	liposomes and aerosol and (heat$ same volume)	2000-05-15 09:38:18
S68	U	USPT	5958378.pn.	2000-05-15 09:30:23
S67	U	USPT	(target adj region) same (lung)	2000-05-15 08:33:02
S66	U	USPT	(target adj region) same (respiratory adj tract)	2000-05-15 08:32:37
S65	U	USPT	(target adj region) same (respiratory tract)	2000-05-15 08:31:01
S64	U	USPT	(mmad or mmead or (aerodynamic adj diameter)) same target	2000-05-15 08:11:07
S63	U	USPT	(aerosol and lipid and dna and lung) and (mmad or(aerodynamic adj diameter))	2000-05-15 07:18:11

Next Oldest

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